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**MASTER OF MILITARY STUDIES**

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**TITLE: ENHANCING AIR BASE DEFENSE THROUGH JOINT DOCTRINE**

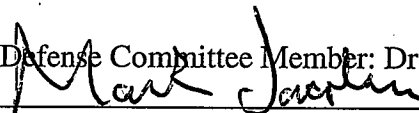
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## Executive Summary

**Title:** Enhancing Air Base Defense Through Joint Doctrine

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**Thesis:** *Forward air base force protection, which is increasingly vulnerable in irregular warfare, can be enhanced for current and future operations through comprehensive adjustments to joint doctrine regarding air base defense.*

**Discussion:** There has been an increased degree of importance and subsequent vulnerability levied on forward operating air bases from the tactical to the operational levels of war with a growing progression that will advance far into the future. A historical analysis of air base attacks provides context to the emphasis needed toward current and future air base defense operations within hybrid warfare environments. Persistent threats from air base footprints, such as harassing indirect fire, continue to effect air operations and are likely to proliferate further over time. Various shortfalls in standing doctrine detract from efficient air base defense in an irregular warfare environment and have led to unnecessary losses of material and personnel over time. Filling in doctrinal gaps to DoD/Joint guidance for air base defense planning and improved interoperability can create an improved foundation for combatant commanders.

**Conclusion:** The future success of combat operations at the operational level will rely heavily upon airpower across the joint spectrum. Airpower will only be as effective as the security provided to the air bases those critical sorties are launched and recovered from. Unimpeded defense of this vital center of gravity in an increasingly hybrid warfare environment can be fully realized with a joint doctrine specific to the unique needs and considerations surrounding it.

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## *Preface*

I chose this topic of air base defense based on the personal experiences and observations I've made within my Air Force specialty throughout my career. As such, this is a topic I am immensely interested in. The mission of Security Forces is diverse; however, I've spent more than two thirds of my career focused on air base defense. I commanded two air base defense regional training centers, one in Korea for Pacific Air Forces and one in Nevada for Air Combat Command. I also served as an S3 with the 820<sup>th</sup> SFG, an organization specializing in operational air base defense deployments.

Base defense has proven increasingly challenging given the wide spectrum of threats we face from insurgents. I've dealt with these challenges routinely while deployed; therefore, most of my observations regarding current air base defense threats were garnered from first-hand experience as an expeditionary Security Forces operation officer in Iraq. My tours in Operation IRAQI FREEDOM include S3, 447<sup>th</sup> ESFS, Camp Sather, Baghdad International Airport (BIAP) in 2004; followed by a second tour as S3, 506<sup>th</sup> ESFS, Kirkuk Regional Air Base (KRAB) in 2005.

I want to thank retired USAF Lt Col Joe Rector, a tremendous mentor, for initially sparking my interest as a young LT to continually focus on ABD doctrine and application. A focus and special interest I've carried throughout my career. I would also like to thank my professor Dr Jacobson for his guidance on research; he is a mentor who possesses a wealth of military history. Lastly I want to thank my wife Monica for all her patience and support while deployed, while attending Marine Corps University, and throughout the years of service.

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The evolution and importance of airpower throughout the past century is immensely significant on the modern battlefield. Although capable ground forces will always be essential to ultimately win any nations wars; recent history has shown that an armed force lacking airpower dominance is constrained to limited objectives on the ground. These inherent assertions regarding airpowers impact on military success underscore the relevance from which the entirety of this paper is written. Subsequently, air base defense is a recognized critical requirement in order to ensure air power and warrants well defined doctrinal guidance for effective planning.

Threats to air bases in hostile environments have always posed unique defense challenges; these challenges are further compounded in today's increasingly asymmetric and irregular combat environments. Forward deployed air base operations on the modern battlefield are routinely impeded through insurgent harassment activity. In the first two years of OIF, US air bases were attacked through harassment fire well over 1000 times.<sup>1</sup> The limited pursuit of cohesive air base defense planning guidance from CENTCOM in the wake of seven years of conflict is indicative of a lack in substance within joint doctrine. *Forward air base force protection, which is increasingly vulnerable in irregular warfare, can be enhanced for current and future operations through comprehensive adjustments to joint doctrine regarding air base defense.*

Standard historical accounts address both the significance and vulnerability of air bases as lucrative targets from the earliest days of airpower. Examples and opinions from prominent historical figures provide context toward the emphasis needed for air base defense. Understanding recent trends in the modes of warfare and how they relate to modern air base defense threats is useful to frame this discussion as well. Everything



from growing ideological threats, to emerging enemy tactics, techniques, and procedures is pertinent. A progression of this discussion will move to analyze some of the existing base defense systems erratically employed across the joint spectrum. This process then sets the stage for addressing the core concern within the limited joint doctrine that currently exists for air base defense. Lastly, identifying simple baseline adjustments and additions to joint doctrine guidance will provide a path to overall enhancement.

#### HISTORY OF AIR BASE ATTACKS (Defense Proponents, Historical Examples):

Shortly after the conclusion of World War I, Italian Army General Giulio Douhet remarked "It is easier and more effective to destroy the enemy's aerial power by destroying his nests and eggs on the ground, than to hunt his flying birds in the air."<sup>2</sup> From airpower's beginnings, the inherent vulnerabilities that existed with aircraft on the ground were recognized. Despite these obvious vulnerabilities, time and time again the same lessons would be repeated by military leadership who failed to properly safeguard these fragile war-fighting resources. "Between 1940 and 1992, ground attacks on air bases occurred at least 645 times in 10 separate conflicts, destroying or damaging over 2,000 aircraft in locations worldwide."<sup>3</sup> World War II provides a variety of examples from both theatres, emphasizing the strategic importance that well defended air bases played in the tempo of war.

Both Germany and Japan achieved great success early in the war through attacks on air bases. Germany seized key airpower terrain in the Scandinavian countries as well as France and Greece by exploiting poorly defended airfields. The British loss of three

air bases on Crete in 1941 convinced the government that a dedicated air base defense force was needed; this led to the creation of the RAF Regiment in the same year.<sup>4</sup> The significance of this need is captured in a memo regarding air base defense from Sir Winston Churchill, "Every airfield should be a stronghold of fighting air-groundmen, and not the abode of uniformed civilians in the prime of life protected by detachments of soldiers."<sup>5</sup> Understanding not only the importance of effective air base defense, British SAS units enjoyed a great deal of success on the offensive, harassing Axis air base operations in North Africa and in Italy.<sup>6</sup>

The Pacific theatre of World War II provides a classic series of case studies for the strategic importance of air base defense. The Japanese projected power throughout mainland Asia and the entire Pacific by attacking, seizing, and constructing new airfields. Two significant turning points in the Pacific theatre revolved around the same seemingly modest airfield on Guadalcanal. Capturing and holding Henderson airfield was the first ground offensive victory for the American forces fighting Japan. The loss of the airfield for Japan held significance as well. Despite great efforts to retake the airfield, the unsuccessful Japanese attacks would signal a shift in momentum for the empire. From a strategic position, after Guadalcanal, Japan would be on the defensive until the wars conclusion.<sup>7</sup> The importance of air base control during OPERATION WATCHTOWER and OPERATION CARTWHEEL would be repeated time and time again on additional airfields throughout the island hopping strategy of the U.S. as we edged ever closer to mainland Japan.<sup>8</sup> Positioning airfields for the employment of airpower enabled U.S. forces enough range for our bombers to deliver the ultimate blow that ended the war.

The Korean War involved limited air base attacks relative to World War II.<sup>9</sup> Kunsan airfield was attacked by the North Koreans and ultimately abandoned once supporting forces began to withdraw further south to Pusan. After the landing at Inchon, the U.S. Air Force ultimately regained Kunsan airfield, but harassment from North Korean guerrilla units prevented its use for several months.<sup>10</sup> Compared to Korea, U.S. air base attacks in Vietnam were a mainstay of Viet Cong (VC) guerilla tactics. More ground attacks on air bases were recorded during the Vietnam War than in any other previous conflict; there were 493 incidents between 1964 and 1973, the preponderance occurring between 1968 and 1970.<sup>11</sup> The persistent VC air base attacks resulted in aircraft losses on the ground to the extent of 393 destroyed and 1,185 damaged.<sup>12</sup> The threats in South Vietnam that were well behind the DMZ did not resonate solely from indigenous VC units, in 1968 and 1969 the North Vietnamese Army reverted to sapper-guerrilla warfare across the country, compounding the irregular threats already present from VC elements.<sup>13</sup> The primary means of attack involved standoff indirect fire (IDF) mortars, which were extremely difficult to mitigate. Despite the standard IDF *modus operandi*, penetrating attacks were launched 21 times at USAF air bases with varied success.<sup>14</sup> All main operating air bases were repeatedly attacked throughout the war, yet the attacks at Bien Hoa and Tan Son Nhut had the most profound significance.

In the months following the 1964 Gulf of Tonkin incident, Bien Hoa Air Base was attacked with alarming sophistication and success in what was commonly viewed as the first substantial attack against US forces in the mainland of Vietnam. In the early hours of 1 November, 1964 VC launched a twenty-minute barrage of 81-mm mortar fire from pre-built positions, destroying five B-57 bombers, damaging fifteen more, and

killing 4 servicemen before they slipped away into the night without any VC losses.<sup>15 16</sup>

This attack was a wake-up call for U.S. Military Assistance Command, Vietnam (MACV) concerning the significant threats posed by insurgent fighters. As significant as the attack at Bien Hoa was, there are two watershed moments for air base defense which occurred at Tan Son Nhut Air Base.

On 13 April 1966, 245 rounds of accurate mortar and recoilless rifle fire pounded the active air base at Tan Son Nhut, destroying aircraft, vehicles, and a 420K gallon fuel tank. This was the most destructive IDF attack of the war.<sup>17</sup> The other watershed event for Tan Son Nhut occurred during the Tet Offensive of 31 January 1968 when multiple battalion size forces of Viet Cong and North Vietnamese regulars swarmed the base. The massive size of enemy assailants, estimated to be over 2500, constituted the largest ground force to attack an active U.S. air base since Henderson airfield at Guadalcanal. As noted in the Pacific Air Forces Special Report on the Vietnam War's 1967-1968 Winter/Spring Campaign, "The enemy had gathered a force of sufficient size...to overrun and occupy, at least temporarily, the air nerve center of South Vietnam."<sup>18</sup> Despite the overwhelming force bearing down on Tan Son Nhut, bold maneuver from quick reaction forces limited their advance and prevented the base from being completely overrun. Strangely enough, more resources were destroyed/damaged at Tan Son Nhut in the IDF attacks of 1966 than in the massive penetrating advance of 1968; however, the loss of life was vastly more significant in the latter. Throughout the war, in total, more U.S. Air Force fixed wing aircraft were destroyed by ground actions than were downed by air to air action from MiGs.<sup>19</sup>

## CURRENT AND FUTURE AB THREATS (Irregular Warfare Context)

Irregular warfare threats to air bases in Afghanistan and Iraq are just as significant today as they were in Vietnam. The term “guerilla warfare” was common for decades and has since transitioned in our lexicon to “irregular or insurgent warfare.” This broad meaning term still continues to evolve while some circles have transitioned toward the overarching term “hybrid warfare.” Ultimately, we are dealing with an asymmetric clash of wills, and although recent warfare terms may not have always been part of the vernacular, the principal methodologies irregular warfare connoted have challenged the U.S. armed forces since the 18<sup>th</sup> century.<sup>20</sup> For this matter, the concept’s impact on modern day U.S. air bases is little different than the same complexities MACV faced from VC ambitions forty years ago. Modern air base activity in Iraq and Afghanistan faces insurgent harassment fire on a regular basis.

Although the insurgents surge their activity just as conventional forces do, indirect fire (IDF) attacks have been a constant hindrance since the U.S. entries into Afghanistan and Iraq following the events of 11 September 2001. Insurgent IDF strikes have hit bases from a wide variety of venues and methods. Unlike many of the IDF strikes to air bases in Vietnam, attacks in Iraq and Afghanistan are typically very short in duration with merely one to five impacts during an event and with little to no accuracy. Most attacks come from rockets, rather than mortars, launched far from the base with relatively low trajectories. The launching platforms are typically improvised and crude, sometimes merely a sloping piece of cleared ground with a car battery used as an ignition source. These trends make the threat extremely difficult to defend against through

conventional counter IDF systems such as counter battery radar. What the insurgents lack in accuracy and volume of ordinance per attack, they have made up for with unassuming ingenuity and a steady long term frequency of harassment.

Airmen reacted to IDF attacks in 2004 impacting Camp Sather, Baghdad International Airport (BIAP) two to three times a week. All of these attacks effectively disrupted and delayed operations while unidentified explosive ordinance (UXO) sweeps were conducted in the aftermath of each attack. Within the larger BIAP complex, the entire base was hit multiple times daily throughout the other camps and logistic staging areas. Given the ongoing tempo across the theatre, it is no surprise accurate counts for air base IDF attacks have been extensive, ever changing and difficult to pin down over the years. Although IDF attacks typically have limited impact other than harassment, when harassment fire is launched as routinely as it is, the laws of probability eventually add up. Two incidents within a month of each other at Camp Sather in 2004, resulted in airmen being hit by shrapnel from two separate attacks, one was seriously injured losing part of his arm. In that same month during another attack, a rocket struck the JP-8 fuel bladder storage area. The massive fire and smoke that resulted could be seen for miles, it spread out to other fuel storage bladders and took the Air Force fire fighters more than six hours to extinguish and over a week to clean up secondary HAZMAT damages. Needless to say, that IDF attack seriously impacted airfield operations (photo at Appendix A). Some significant sources of frustration at BIAP in 2004 were the lack of inter-service coordination, connectivity shortfalls, and limited situational awareness between multiple control centers throughout the many camps. Camps and control centers had varied responsibilities for perimeter security, internal security, and almost no collective planning

for external security measures. The mass of collective shortfalls and a subsequent reluctance to coordinate patrols of IDF footprints created an uncontested target rich environment for insurgent IDF attacks. An over reliance on decentralized execution from units during that period were typical, the uncoordinated actions were ultimately counterproductive in an irregular warfare environment providing many gaps for the insurgents to exploit.<sup>21</sup> The lack of a coordinated IDF defense plan impacted HUMINT collection, information that is vital to base defense amidst insurgent activity.<sup>22</sup> An active engagement with the local IDF footprint community appeared to be absent. It was still the relatively early days of OIF in 2004, approximately a year after the airfield had been seized by coalition forces. Air base defense coordination was slow to improve, yet it made painful strides despite the lack of explicit joint doctrine.<sup>23</sup>

A review of the operational air base defense environment one year later in Northern Iraq at Kirkuk Regional Air Base (KRAB) provides another OIF perspective. The base defense concept of operation at KRAB was very different from BIAP. The span of operational control to defend KRAB was less complex with fewer layers of command, yet it was still divided. Defense was split up between the Air Force 506th Air Expeditionary Group (AEG) and the Army 116th Brigade Combat Team (BCT). The Air Force was primarily responsible for the Base Operating Support (BOS) mission, securing transient aircraft and providing internal defense up to the base perimeter. The BCT secured the battlespace surrounding KRAB to include a vast expanse of Northern Iraq. The extent of forces available relative to the span of responsibility was grossly inadequate. Most of the air base defense challenges at KRAB were derived from IDF attacks that the 116th BCT was unable to effectively address. The BCT battalions were

stretched thin across an enormous distance and unable to adequately dedicate patrol forces throughout the air base IDF and MANPAD footprints. Although insurgent activity in 2005 was less intense in northern Iraq compared to central Iraq, multiple insurgent factions still presented routine threats to coalition forces. Through early 2005, IDF attacks on KRAB typically occurred more than twice a week on average with the same modus operandi experienced at BIAP. Insurgent rockets were launched from stand-off footprints with up to five rounds impacting per attack.

Efforts to identify IDF points of origin (POO) occasionally came in from U.S. Army Ground Base Radar; however, the unconventional means of launch typically meant Air Force sentries posted around the perimeter provided the direction and origin. Because the 116th BCT had a limited patrol presence given competing missions, they merely reacted to IDF footprint POO with little to no effect on preventing future attacks. Furthermore, reaction to the footprint POO was extremely delayed, sometimes a day or more after the attack. This ineffective cycle meant KRAB took IDF hits from all directions on a routine basis with little impunity just like BIAP. Eventually an arrangement between the 116th BCT and 506th AEG allowed Air Force security forces to assist with control of the battlespace beyond the perimeter and to the west of KRAB for footprint security. The 506th ESFS restructured its force allocation to provide a significant patrol presence and saw IDF attacks drop dramatically. There was a seamless transition between perimeter security and base defense patrol operations to the West. Following this adjustment, IDF attacks against KRAB decreased by 75% over the next five months out of the western AO under 506th ESFS control.<sup>24</sup> The 506th ESFS Base Defense Operations Center (BDOC) coordinated with the 116th BCT 3rd Battalion



Tactical Operations Center (TOC) for all patrol activities. This seamless coordination not only enhanced patrol efforts to the west, it essentially enabled the 3rd Battalion to press Bravo Company into a thinned out operational scheme of maneuver in other AO responsibilities well beyond KRAB.

Coordination continued to grow as the 506th ESFS participated with the 116th BCT in multiple joint operations involving Tactical HUMINT Teams (THT's) for the capture of enemy material and personnel threatening the air base. The populace within the dozen rural villages West of KRAB began to trust the airmen conducting these routine patrols and brought forward valuable HUMINT information (photo example appendix B). This is proof that the insurgents were struggling to operate without the support of the village masses. Continued base defense coordination led to KRAB's first formal Integrated Base Defense Plan.<sup>25</sup> Despite these improvements IDF attacks continued to emanate from the East, in areas that still lacked a persistent presence.

Specific statistics regarding coalition aircraft losses are relatively modest compared to Vietnam figures, although far from negligible. Rotary aircraft have taken the greatest brunt of losses from enemy attacks just as they did in Vietnam. C-130 aircraft have been the primary fixed wing targets since 2003. Two C-130's were damaged from sabotaged runways and one was shot down and destroyed in late '04 near Balad Air Base.<sup>26</sup> In 2004 Iraqi insurgents also succeeded in hitting a C-5 Galaxy with a MANPAD which forced it and 63 passengers to the ground in an emergency landing.<sup>27</sup> Despite the relatively low numbers of aircraft destroyed in OIF, a significant number have been damaged from insurgent IDF attacks over the past seven years. Continuous IDF harassment has impacted air base operations in numerous ways. Although specific

situations vary greatly across locations and timeframes within the Global War on Terror, the same central themes have continued to play out. The methods of irregular warfare are here to stay and IDF attacks are the method of choice when it comes to disrupting air base operations.

The facts are undeniable, in Iraq and Afghanistan insurgents will continue to follow a proven strategy as explained by Mao Tse-Tung decades ago. His commentary demonstrates an enduring doctrine for irregular combatants, "In guerrilla strategy, the enemy's rear, flanks, and other vulnerable spots are his vital points, and there he must be harassed, attacked, dispersed and exhausted."<sup>28</sup> The future of warfare for U.S. forces grows increasingly complex as asymmetric threats abound from the most sophisticated conventional adversaries to the most unassuming irregular combatants.<sup>29</sup> The United States and its combat forces will continue to be the leading target for insurgent and guerilla fighters as the weak constantly seek validation in their cause by striking at the strong.<sup>30</sup> Air base operations, and the American military might they represent, provide insurgents an immediate payoff target. The potential for exploitation is present from the tactical to the strategic levels. Even the smallest victory from an attack at a major forward air base brings renewed strength to the insurgents' cause. Attacks will continue from distant footprints, and we will have to leave our traditional comfort zones within the FOB in order to meet these challenges effectively. A new level of prudence coupled with vigilance well beyond the base perimeter is required to dissolve the backdrop of support insurgents rely upon in order to flourish. Responding with force in the aftermath of an IDF strike to a general vicinity will have minimal results at best and may create further resentment from the local populace depending on the means and methods involved.

Within irregular warfare, only persistent community engagement and cultural awareness around deployed air base footprints will set the stage for an enhanced defense.

## CURRENT ABD CAPABILITIES

Technologies should not be overly relied upon in order to secure critical requirements, especially in an irregular warfare environment. Still, they are another unique aspect of air base defense that can combine with appropriate TTP's captured within joint guidance. Technology advancements over the past two decades have bolstered air base defense capabilities. Since the early nineties, the U.S. Air Force has employed Tactical Automated Sensor Systems (TASS) in deployed environments for advanced detection of enemy intrusions and continues to do so with success. These systems involve microwave, passive infra-red, and seismic sensors as well as long range surveillance capabilities. They comprise a very capable system of systems; however, as additional detection technologies have surfaced, many through other services, there was no attempt to formally tie them in. What has resulted in Iraq is that numerous base defense C4IR systems, each very capable, are being employed through various control centers with little to no joint coordination throughout the various FOB's and situational awareness is lacking. As an example, one control center would use a classified chat room for rapid Intel dissemination and another would not. In another example, one base would employ a far-reaching surveillance system called J-Lens while another base perfectly suited for the system did not. Additionally, a "shot spotter" technology that can pin point sniper fire around an air base was successfully fielded at KRAB and then a different

system would be used at another base, while some bases would not have any counter sniper system at all despite the need and availability. Other examples include numerous vehicle and personnel entry control search systems that have continuously varied from base to base. Changing geographic information systems, surveillance platforms, tactical communications, and counter intelligence analysis/distribution systems all contribute to a technologies evolution dynamic that extends well beyond joint doctrine guidance. These trends have continued throughout Iraq from 2003 until present; however, guidelines to manage and capitalize on the trend have been stagnant.

Beyond the disarray of air base defense technologies erratically fielded throughout the CENTCOM theatre, there also exists a training gap. Tactics, techniques, and procedure (TTP) variances between the services aside, many of these base defense systems are fielded without any lead in training. Typically training was expected to occur during the relief in place/transition of authority (RIPTOA) phase of units switching out in theatre. Typically this time proves insufficient in so far as most RIPTOA phases are a rushed process where the outgoing force is in a haste to leave and the incoming force is in a hurry to assume control. Even when not rushed, this on the job training lacks focus and presents vulnerabilities when a learning mistake can have dangerous consequences. Additionally, forces learning an ABD technology system from a cold start in theatre go through a four to six-week learning curve depending on the system at that base in Iraq. At best, a few CONUS training centers provide merely orientation on the existence and general capabilities of these systems, but no practical application.

The disarray of ABD technologies and subsequent training gaps are more than just an Air Force concern, they are a joint challenge requiring a joint solution. Many

critical air base defense systems are stove-piped within specific services, proving joint integration is essential. Without expanding on the multitude of systems erratically dispersed through CENTCOM, two systems of a joint nature warrant attention given the prominent IDF threats. The recently developed counter rocket, artillery, and mortar system known as C-RAM has had a significant impact on IDF mitigation. The program was initiated and went into a rapid development path at the request of the U.S. Army Chief of Staff and was initially fielded in July 2005, scoring its first hit in 2006. The system was a marriage between existing services technologies such as the Army ground base radar, the Navy Phalanx close-in weapon, along with air defense sensors which all led to it scoring its 100th IDF intercept in May 2008.<sup>31</sup> Successful employment has gone beyond intercepts, as it has provided over 1,500 localized warnings of IDF in nearly three years.<sup>32</sup> Despite the positive impact for IDF mitigation this joint system provides, its employment still lacks operational planning guidance within the greater scheme of air base defense.

Another air base defense capability remains underutilized within a technology that is readily available for increased surveillance and reconnaissance. It is referred to as the "ROVER" imagery system and is capable of pulling in live feeds from a multitude of airborne platforms. From a simple laptop computer (with a classified software package) and a small unique antenna receiver, key terrain around an air base can be readily assessed from various camera pods mounted on both manned and unmanned aircraft that take off and land at that very same air base. Most fixed wing aircraft based out of Iraq maintain a camera pod system, such as the "lightning pod," and signal transmitter that can immediately push overhead imagery to ROVER system receivers.<sup>33</sup> This capability

has been around for several years utilized by forward air controllers; however, it has only seen increased utility beyond its initial scope within the last few years. Control centers and patrols seeking live overhead imagery with respect to key terrain around an air base can receive immediate input from either unmanned aerial systems or fighter aircraft on departure or arrival. At the 2007 U.S. Air Force Firepower demonstration, the 99th GCTS provided a congressional audience a glimpse of the impact such coordination can have around a forward air base for integrated defense. This is another example of a readily available system that can work in conjunction with IDF patrols to bolster air base defense with the aid of appropriate doctrinal guidance. For all the existing capabilities, the greatest challenge is tying systems together, ensuring joint awareness, and deriving the appropriate benefits across the full spectrum.

#### ANALYZING CURRENT ABD DOCTRINE (An Analysis of Joint Publication 3-10)

Doctrine determines how we organize, train, and equip as a force; therefore, if leaders fail to fully acknowledge the importance that the foundation of doctrine plays, they are doomed to continue the mistakes of the past and miss opportunities for success in the future. A classic example is a pursuit of technology solutions without its careful link up to organizational employment and training guidance. Until recently, Joint Publications 3-10 and 3-10.1 "Rear Area Defense" has been the primary joint publications of reference regarding air base defense as it relates to Level II (guerilla/insurgent) enemy threats. The publication underwent revision three years ago and is now titled "Joint Security Operations in Theatre" JP 3-10, republished 1 August

2006. Part six of the publication specifically addresses air base defense considerations but provides only a cursory reference to the need for integrated defense planning.

Although some unique threats to air bases are addressed, the publication is vague regarding the base security zone or base boundaries (formally called the Tactical Area of Responsibility). The definition of base boundary is ambiguous at best and is relegated primarily to the base perimeter or only that area immediately within eye sight of it. It also fails to fully address areas such as span of control, integrated base defense (IBD) concepts, and the unique elements of intelligence preparation of the battlespace surrounding an air base. Unfortunately, the publication paints an ambiguous picture with phrases such as “depending...should...may be...” and “consider” found throughout the joint doctrine where more deliberate guidance is desperately required.<sup>34</sup> The unique and historical challenges of indirect fire warrant more extensive guidance. A troublesome theme presents itself and is manifested in excerpts such as, “It is not feasible to catch every terrorist or guerilla before they act, so the best practice is to shape the base security environment with robust defense operations within the base boundary.”<sup>35</sup> This sort of tone appears to relinquish all the initiative to the enemy and is completely absent of counter insurgency (COIN) strategies.<sup>36</sup>

A significant portion of the current joint publication addresses shoulder launched surface to air missile threats, also referred to as man portable aerial defense (MANPAD) weapons. This area of the joint publication represents a significant improvement, as acknowledgement and mitigation of this threat was completely lacking in the previous edition of 3-10. The attention placed on MANPAD mitigation needs to coexist with other critical standoff weapon concerns and planning considerations. The prudent

concerns for MANPAD threats and IDF threats easily work in concert with each other as they relate to the overall concept of ABD footprint security, yet this connection is absent in the current doctrine.

Doctrine merely provides the framework and reference point for operational decision making and is not the “end all...be all” for combat employment. Authors of joint publications provide for flexible guidance through phrases such as “may... or consider...” But that flexibility is already accounted for through combatant commanders’ discretion and interpretation. Additional ambiguity can only obscure the significance of critical planning, task organization, and programming essential parameters. The revised 3-10 joint publication included improvements from its earlier edition as all revisions should; however, it still falls short of the fidelity needed for enhanced air base defense within the joint spectrum of capabilities. There is a lack of focus on defense in depth gained through the vital IDF footprints well beyond the perimeter, a concept that is crucial in an irregular warfare environment. In the IDF footprints surrounding an air base, U.S. forces can work towards a positive interaction with the populace in order to gain intelligence and mitigate insurgent threats before they thrive amidst the people. Insurgencies at all levels (strategic, operational, and tactical) thrive or fall based on the support from the masses.<sup>37</sup> This principle resonates across a nation or geographic region and is no less prevalent within the populations surrounding our vital air bases. Other key air base defense themes that lack doctrinal focus include, inadequate battlespace/control center coordination, as well as disjointed and inconsistent technology applications.<sup>38</sup>



## A NEW JOINT ABD DOCTRINE RALLY POINT (Where/how to adjust)

Suggested adjustments to joint doctrine and its concept of application fall within three categories. The first category involves specific guidance relevant to procedural applications within command and control as it relates to air base defense battlespace margins. The most prominent aspect is a need to clearly define the ABD boundaries to include an active patrol presence aligned with COIN doctrine in all stand-off threat footprints.<sup>39</sup> The second category addresses communications and intelligence gathering standardizations. The third area covers the enduring need for a joint air base defense acquisitions approach with full interoperability of technologies, coupled with an emphasis on joint air base defense training venues.

### (A) ABD DOCTRINE FOR BATTLESPACE MARGINS

Unity of command for air base defense forces is vital to success. Singular defense force commander (DFC) authority derived from the base commander must encapsulate internal base response through perimeter security and ultimately out to the limits of the furthest threat footprints. This is not the case today for air base defense at any forward deployed location. The battlespace must extend beyond the perimeter in all directions to account for the longest reaching insurgent weapons capability. This makes up the base security zone and cannot be minimized. Adequate force allocation must accompany this base security zone defense responsibility. Defense forces must be allowed to shape this environment through active patrols; their ability or inability to do so will ultimately influence which direction the masses move in relation to supporting insurgents. Mao

Tse-Tung emphasized this when he said, "Historical experience suggests that there is very little hope of destroying a revolutionary guerrilla movement after it has survived the first phase and has acquired the sympathetic support of a significant segment of the population."<sup>40</sup> The defense force must be present if it hopes to protect and gain the support of the masses and thus the full benefit of HUMINT that is available.

Defense forces, regardless of which service is assigned the air base defense responsibility, must be trained and deployed for that specific mission. When one unit or service is assigned internal security and a completely separate unit/service or series of units manage the battlespace beyond the perimeter while balancing other tasks, mission friction/fracture is certain to prevail. A cohesive chain of battlespace allocation out to the furthest footprint is necessary. This consideration cannot be overlooked given the vital center of gravity that an air base plays. Failure to explicitly address these issues within the joint publication will result in the services continued struggle within forward air base footprints, key terrain that is vital to countering both IDF and MANPAD threats.<sup>41</sup>

#### (B) ABD DOCTRINE FOR COMMUNICATIONS AND ISR

Formal identification of communication interface requirements through common software, tactical communication, and computer networks (both classified and unclassified) systems needs to be spelled out in Joint Publication 3-10. Without explicit guidance, situational awareness will continue to be sporadic and uncoordinated. Additionally, intelligence, surveillance, and reconnaissance capabilities surrounding the air base need to be integrated and addressed through the joint publication detailing how their output is fused at the base defense control center (BDOC). Early warning and

detection systems coupled with enemy point of origin and IDF acquisition systems (such as the C-RAM) need to be standardized at a joint level for air base defense. Their utility and concept of employment must be incorporated as a point of doctrine with all air base defense planning.

#### (C) ABD DOCTRINE FOR TRAINING AND SYSTEMS ACQUISITIONS

This leads to the third category for adjusting air base defense joint doctrine related to training and systems acquisitions. Each forward air base facing validated threats should be afforded the same systems to meet that threat. A greater economy of scale can be achieved at the joint level as resources are acquired provided the benefits of security from the system are matched across all services.

The services also need joint guidelines for air base defense training. Small unit tactics that account for deployed cultural familiarity are essential for aggressive defense within the footprints of the base security zone. Added training emphasis is also needed at the command, control, and planning levels. A future joint publication on ABD needs to specify concepts such as full spectrum IPB to include modified combined obstacle overlays (MCOO) stressing key terrain with IDF footprints and human terrain mapping considerations related to cultural and ethnic population centers. Other critical concepts to be spelled out are formal base vulnerability and priority analysis techniques as well as quick reaction force (QRF) concepts of operation and employment within the base security zone. Far too often, units parceled together from multiple locations deploy with a stateside installation security plan concept. This is not surprising given the current

limited base defense span of control and the lack of doctrinal emphasis. Typically these forces function along stateside force protection postures despite the combat environment.

Situational awareness is critical to enhanced air base defense at all levels of operation. Security forces will be ineffective and vulnerable on patrols unless leadership provides focus for those missions through proper IBD planning with priority intelligence requirements. MANPAD threat mitigation will be of little value unless leadership all the way down to the patrol leader understands both enemy and friendly capabilities. Robust joint training opportunities for enhanced air base defense can be identified through the joint regional training center, Joint Chiefs of Staff exercises, and the national training center. Specialized C4IR courses tailored to critical air base defense leadership elements can be developed for standardized training at either a joint venue or within individual service specific communities.

## CONCLUDING THOUGHTS FOR AN ENHANCED ABD PATH

The increasing capabilities of airpower have only heightened its value as high demand, low density assets. Even in irregular warfare, its utility has become increasingly pronounced over time as airpower platforms grow more and more advanced. The immense combat power projected by these platforms is what has always justified their growing expense, yet this trend is not service specific to any branch despite the appearance. Military reliance on airpower, and thus on air bases, has steadily grown across the services for logistics, troop transport, surveillance/reconnaissance, medical evacuation, and a vast array of combat fires platforms. History has shown that it is

impossible to discount the strategic, operational, and tactical value of airpower, thus lending forward air bases to function as vital centers of gravity on the modern battlefield.

The fact that air bases represent vital sources of power and movement continues to expose them as lucrative targets. For the United States, this fact has resonated throughout Operation ENDURING FREEDOM and Operation IRAQI FREEDOM. Insurgent attacks have poured on steady IDF and sniper fire into U.S. forward deployed air bases over the past seven years. Leadership can certainly expect these efforts to continue or even increase, there and elsewhere, if not properly addressed. The U.S. cannot afford to wait for a watershed event when the first C-17 loaded with personnel is destroyed by an advanced MANPAD in the air or reduced to rubble by IDF while sitting on a ramp.<sup>42 43 44</sup> Leadership, the public, and congress will ask “How did we allow this to happen?” Far too often our doctrine is so reactive that we wait until our armed forces fall victim to such watershed events before we scrutinize issues where all the warnings were present yet received little attention.

We must begin now to develop explicit guidance for an adjusted approach to how we organize, train, and equip for the air base defense mission. Combatant commanders can then bring focus to enhance these vital force protection operations, rather than relegating them within the purview of just another additional duty and a secondary concern. The operational TTP's are readily present and the technologies for an enhanced approach are available. An explicit joint doctrinal focus for mission coordination, task organization, and ABD planning is the only missing piece.

## ENDNOTES

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<sup>2</sup> Alan Vick, *Snakes in the Eagles Nest* (Santa Monica, CA: Rand Publishing, 1995), Summary Pg xiii.

<sup>3</sup> David A. Shlapak and Alan Vick, *Check Six begins on the Ground Responding to the Evolving Ground Threat to U.S. Air Force Bases* (Santa Monica, CA: Rand Publishing, 1995), 21.

<sup>4</sup> Vick, *Snakes in the Eagles Nest*, 21.

<sup>5</sup> Ibid, 112.

<sup>6</sup> Ibid, 62.

<sup>7</sup> Joseph N. Mueller, *Guadalcanal 1942: The Marines Strike Back*, (London: Osprey Publishing, 1992), 71.

<sup>8</sup> Ronald H. Spector, *Eagle Against the Sun*, (New York: The Free Press Division of McMillian, Inc., 1985), 187.

<sup>9</sup> T.R. Fehrenbach, *This Kind of War: The Classic Korean War History*, (Washington D.C.: Brassey's Publishing, 50<sup>th</sup> Anniversary ed., 2000), 115.

<sup>10</sup> Vick, *Snakes in the Eagles Nest*, 14.

<sup>11</sup> Ibid, 71.

<sup>12</sup> Ibid, 19.

<sup>13</sup> Phillip B. Davidson, *Vietnam at War: The History 1946-1975*, (Oxford: Oxford University Press, 1991), 807.

<sup>14</sup> Vick, *Snakes in the Eagles Nest*, 68.

<sup>15</sup> Ibid, 76

<sup>16</sup> Andrew F. Krepinevich, Jr., *The Army and Vietnam*, (Baltimore: John Hopkins University Press, 1988), 97.

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- <sup>17</sup> Vick, *Snakes in the Eagles Nest*, 77.
- <sup>18</sup> Maj Ben Hittinga, "The Defense of Tan Son Nhut Air Base, 31 January 1968: A Study in the Nature of Air Base Security" (master's thesis, Graduate School of The Ohio State University, 2001) 2. From emphasis added. Pacific Air Forces, *Air Response to the Tet Offensive, Project*, 3. (Hickam AFB Hawaii: *CHECO Special Report*, Headquarters, Pacific Air Forces, 12 August 1968), 13.
- <sup>19</sup> Ibid, 69.
- <sup>20</sup> Andrew J. Birtle, *U.S. Army Counterinsurgency and Contingency Operations Doctrine 1860-1941* (Washington, D.C.: Center of Military History US Army, 2003), 11.
- <sup>21</sup> Daniel Marston and Carter Malkasian ed, *Counterinsurgency in Modern Warfare*, (New York: Osprey Publishing, 2008), 254.
- <sup>22</sup> Malise Ruthven, *"A Fury For God: The Islamist Attack on America"* (London-New York: Granta Books, 2002), 290.
- <sup>23</sup> Lt Gen Walter E. Buchanan III, Air Force Commendation Medal Citation for Capt Shawn Covault, Order # G-0894, 4 January 2005.
- <sup>24</sup> Lt Gen Walter E. Buchanan III, Bronze Star Medal Citation for Capt Shawn Covault, Order # G-0277, 16 November 2005.
- <sup>25</sup> 506th Air Expeditionary Group, Kirkuk Regional Air Base, Integrated Base Defense Plan.
- <sup>26</sup> "Ten Feared Dead in Hercules Crash," BBC News.com, February 1, 2005 [http://news.bbc.co.uk/2/hi/middle\\_east/4221521.stm](http://news.bbc.co.uk/2/hi/middle_east/4221521.stm)
- <sup>27</sup> Michael Hoffman, "Some C-5s to get advanced defense system," Air Force Times, February 4, 2008.
- <sup>28</sup> Mao Tse-Tung translated by BG Samuel Griffith *Mao Tse-Tung on Guerrilla Warfare*. (New York: Frederick Praeger Publishing, 1963), 46.
- <sup>29</sup> Bard E. O'Neill *Insurgency and Terrorism* (Washington DC: Potomac Books Inc., 2005), 35.
- <sup>30</sup> Paul R. Pillar *Terrorism and U.S. Foreign Policy* (Washington DC:Brookings Institution Press, 2001), 57.
- <sup>31</sup> "Counter Rocket, Artillery, and Mortar (C-RAM)" GlobalSecurity.org, February 10, 2006. <http://www.globalsecurity.org/military/systems/ground/cram.htm>

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<sup>32</sup> "Army C-RAM Intercepts 100<sup>th</sup> Mortar Bomb in Iraq," Defense Update.com May 2008. [Defense-update.com/newscast/0508/news2105\\_c\\_ram.htm](http://defense-update.com/newscast/0508/news2105_c_ram.htm)

<sup>33</sup> Ted Carlson, "Sting of the Viper," Flight Journal, October 2002. <http://www.proquest.com/> link to [http://findarticles.com/p/articles/mi\\_qa3897/is\\_200210/ai\\_n9121109](http://findarticles.com/p/articles/mi_qa3897/is_200210/ai_n9121109)

<sup>34</sup> U.S. Department of Defense, *Joint Security Operations in Theatre*, JP 3-10 (Washington DC: Department of Defense, 2006), IV-16.

<sup>35</sup> Ibid, IV-8.

<sup>36</sup> Marston, *Counterinsurgency in Modern Warfare*, 254.

<sup>37</sup> Mao Tse-Tung trans by Brigadier General Samuel B. Griffith, *Mao Tse-Tung on Guerrilla Warfare*, (New York: Frederick Praeger, Inc., 1961), 43.

<sup>38</sup> U.S. Department of Defense, JP 3-10, IV-15 thru IV-18.

<sup>39</sup> Marston, *Counterinsurgency in Modern Warfare*, 258.

<sup>40</sup> Tse-Tung, *Mao Tse-Tung on Guerrilla Warfare*, 27.

<sup>41</sup> Maj David P. Briar, USAF, Sharpening the Eagle's Talons: Assessing Air Base Defense, Air & Space Power Journal, September 1, 2004. [Http: www.airpower.maxwell.af.mil/airchronicles/apj/apj04/fal04/briar.html](http://www.airpower.maxwell.af.mil/airchronicles/apj/apj04/fal04/briar.html)

<sup>42</sup> David Houska, "MANPADS at a Glance," Arms Control Association, October 2007. <http://www.armscontrol.org/node/2592/print>

<sup>43</sup> Fact Sheet, "MANPADS: Combating the Threat to Global Aviation from Man-Portable Air Defense Systems, Second Edition," U.S. Department of State, July 31, 2008. <http://www.state.gov/t/pm/rls/fs/107632.htm>

<sup>44</sup> Matt Schroeder, "Countering the MANPADS Threat: Strategies for Success," Arms Control Association, 2008. <http://www.armscontrol.org/node/2700/print>



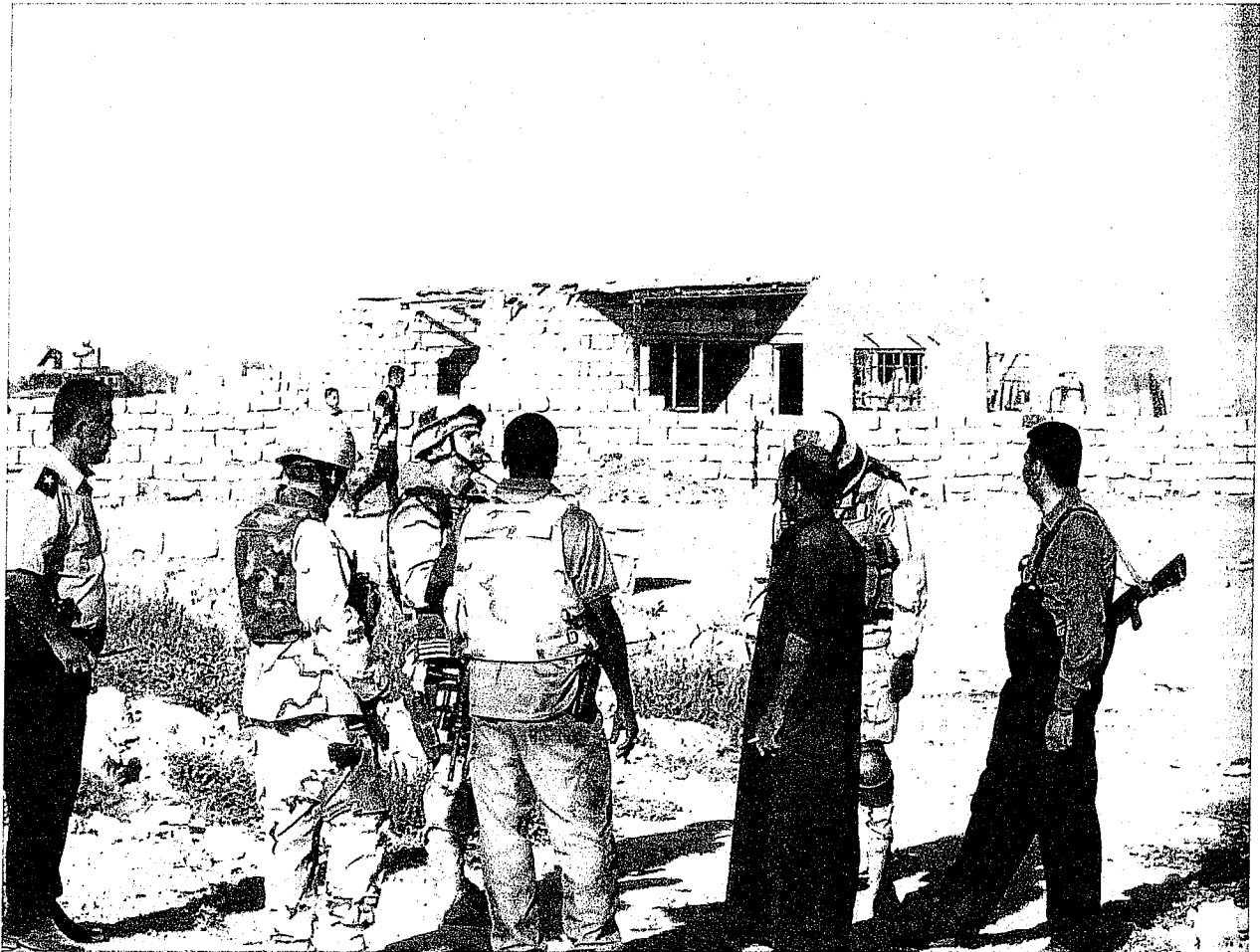
## APPENDIX A



Camp Sather, Baghdad International Airport (BIAP), September 2004

Photo of Petroleum, Oil, and Lubricants (POL) yard on fire following an indirect fire (IDF) attack. An IDF rocket impacted the JP-8 fuel bladders igniting a fire that spilled over to several other fuel bladders. The fire raged on for more than six hours before Air Force firefighters were able to extinguish it while the black clouds of smoke could be seen throughout the city of Baghdad.

## APPENDIX B



Yacchi Village, West of Kirkuk Regional Air Base (KRAB), Iraq, August 2005

506th ESFS Sphere of Influence (SOI)/micro rewards patrol conducted with Iraqi Police. Photo show's myself interacting with local village "Muqtar" (elder). Good will and confidence from the local populace demonstrated coalition forces were providing increased security/stability and generated valuable HUMINT which led to the location of multiple insurgent IDF weapons caches nearby.

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## GLOSSARY OF ACRYNOMS

ABD:	Air Base Defense
RAF:	Royal Air Force
SAS:	Special Air Service
CENTCOM:	Central Command
VC:	Viet Cong (communist guerilla insurgent force within Vietnam)
IDF:	Indirect Fire (such as rockets and mortars)
MACV:	U.S. Military Assistance Command, Vietnam
BIAP:	Baghdad International Airport
UXO:	Unexploded Ordinance
HAZMAT:	Hazardous Material
HUMINT:	Human Intelligence
KRAB:	Kirkuk Regional Air Base
AEG:	Air Expeditionary Group
BCT:	Brigade Combat Team
BOS:	Base Operating Support
MANPAD:	Man Portable Aerial Defense (shoulder fired surface to air missile)
POO:	Point of Origin (related to the launch site of a weapon)
ESFS:	Expeditionary Security Forces Squadron
BDOC:	Base Defense Operations Center
TOC:	Tactical Operations Center
AO:	Area of Operation

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THT:	Tactical HUMINT Teams
FOB:	Forward Operating Base
TASS:	Tactical Automated Sensor Systems
C4IR:	Command, Control, Communication, Computers, Intel, Reconnaissance
TTP:	Tactics, Techniques, and Procedures
RIPTOA:	Relieve in Place and Transition of Authority
C-RAM:	Counter Rocket, Artillery, and Mortar
ROVER:	Remote Operated Video Enhanced Receiver
GCTS:	Ground Combat Training Squadron
IBD:	Integrated Base Defense
COIN:	Counter Insurgency (related to doctrine, strategy, and methods)
DFC:	Defense Force Commander
ISR:	Intelligence, Surveillance, Reconnaissance
MCOO:	Modified Combined Obstacle Overlay
QRF:	Quick Reaction Force

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